

REMARKS

Claims 1-22 are all the claims pending in the application. By this Amendment, Applicant amends claims 1-4 to further clarify the invention. Claims 2-4 are editorially amended for reasons of precision of language and consistency, and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents.

In addition, by this Amendment, Applicant adds claims 5-22.

I. Preliminary Matter

A. Priority

As a preliminary matter, Applicant thanks the Examiner for acknowledging the claim to foreign priority and for confirming that the certified copy of the priority document was received. The Examiner, however, did not indicate acceptance of the Drawings. Applicant respectfully requests the Examiner to indicate the acceptance of the Drawings in the next Office Action Communication.

B. Information Disclosure Statements

Applicant also thanks the Examiner for initialing references listed on Forms PTO/SB/08 A & B submitted with the Information Disclosure Statements filed on July 9, 2003 and January 14, 2004.

C. Specification

By this Amendment, Applicant amends the specification to fix minor informalities. In addition, the specification is amended to clarify that the present invention also relates to a method of producing the master information carrier. No new matter is being added.

II. Summary of the Office Action

Turning to the merits of the Office Action, claims 1-4 are rejected under 35 U.S.C. Section 102(b) and under a provisional double patenting rejection.

III. Prior Art Rejection

The Examiner rejected claims 1-4 under 35 U.S.C. § 102(b) as being anticipated by WO 98/03972 to Ishida (hereinafter “Ishida”). The Examiner used USP 6,347,016 as being the English translation of the WO document. Applicant respectfully traverses this rejection in view of the following comments.

In general, Ishida relates to a master information carrier and a method of producing a master information carrier. Ishida attempts to improve the productivity of the pre-format writing and the sharpness of the magnetic transition at edges of a track where the pre-format is written without sacrificing other important performance criteria such as the S/N ratio or the head-medium interface (col. 4, lines 18 to 38).

In particular, Ishida teaches having at least one surface of the protruding portions being made of a ferromagnetic material. In Ishida, using this ferromagnetic material improves the quality of the servo signal. This ferromagnetic layer has a saturation magnetic flux density more than 0.8 T (col. 10, lines 21 to 33). Also, the thickness of the ferromagnetic layer is varied to produce a better result (col. 10, lines 34 to 54). Furthermore, Ishida discusses in detail the preferred characteristics of the ferromagnetic layer (col. 10, line 55 to col. 12, line 29).

In addition, Ishida teaches that though the section profile of the protruding portion is simplified with a rectangular shape in FIG. 3, *it is difficult to form such a rectangular section over a large area in a real master information carrier made using regular photolithography.*

The section profile of the protruding portion *usually assumes a trapezoidal shape*, where the length of the upper side differs from the length of the lower side, *not a rectangular shape*. In addition, *the edges of the upper side at the surface of the trapezoid become rounded in general* (col. 15, lines 59 to 68). As a result, Ishida teaches a first and a second configuration of the protruding portion of the master information carrier to control the variation of the S/N ratio within a certain tolerance. The protruding portions in both configurations have a *trapezoidal shape* (col. 16, lines 38 to 50).

For example, Applicant encloses Exhibit A that shows two photographs. Photograph 1-4 illustrates the pattern drawn by one time scanning like the Ishida's method. In this photograph 1-4, the end portions of each protruding portion of the irregularity pattern is rounded. Photograph 2-6 illustrates the pattern drawn by scanning a number of times in accordance with the exemplary, non-limiting embodiment of the present invention. As is visible from the photographs, the end portions of the protruding portion of the irregularity pattern are straighter in the photograph 2-6 as opposed to photograph 1-4, where the end portion appear rounder.

The Examiner contends that Ishida suggests each feature of independent claims 1-4. These rejections are not supportable for at least the following reasons. Of the rejected claims only claim 1 is independent. First, claim 1 recites "wherein the pattern comprises a plurality of tracks, and wherein at least one of following conditions is met: when the width of each of said plurality of tracks is smaller than length of one scanning with an electron beam that forms the pattern, the width of each of said plurality of tracks is greater than drawing diameter of the electron beam, and when the width of each of said plurality of tracks is greater than the length of

one scanning with the electron beam, the length of the one scanning is greater than the drawing diameter of the electron beam.”

Ishida does not address the width of the tracks, length of scanning, or its importance. Instead, Ishida teaches having a ferromagnetic film that improves the production of the master information carrier. In particular, Ishida teaches *manipulating the weight, density and other characteristics of this ferromagnetic film material to achieve the most effective production*. With respect to the trapezoidal protrusions, Ishida simply mentions that the width of the track could be 0.2 μm . Ishida, however, does not teach or suggest the relationship between the *width of the track and/or the length of the scanning to the drawing diameter of the electron beam*. In other words, Ishida simply teaches in one of the embodiments that the width of the track is 0.2 μm . This measurement, however, does not teach or suggest whether this width is larger, smaller or equivalent to the length of the scanning and/or the drawing diameter of an electron beam.

Moreover, Ishida fails to teach or suggest when the width of a track is smaller than the length of one scanning, the width of the track being greater than drawing diameter of the electron beam, or when the width of a track is greater than the length of one scanning with the electron beam, the length of the one scanning being greater than the drawing diameter of the electron beam. That is, Ishida clearly does not disclose or suggest anything about the relationship between the width of the track or the length of the scanning and the drawing diameter of the electron beam.

The Examiner alleged that the original claim 1 recites a portion of the process and hence, this portion carries no patentable weight (see pages 2-3 of the Office Action). Claim 1 has been amended to recite: “wherein the pattern comprises a plurality of tracks, and wherein at least one

of following conditions is met: when the width of each of said plurality of tracks is smaller than length of one scanning with an electron beam that forms the pattern, the width of each of said plurality of tracks is greater than drawing diameter of the electron beam, and when the width of each of said plurality of tracks is greater than the length of one scanning with the electron beam, the length of the one scanning is greater than the drawing diameter of the electron beam.” It is respectfully pointed out that the width of the track is a structural limitation, and the width of the track is defined in terms of the drawing diameter based on the relationship between the width of the track and the length of the scanning. As such, clearly the recitation of claim 1 carries patentable weight. In other words, the width of the master medium is clearly a structural element. This width is interrelated to the diameter of the electron beam. Hence, it is appropriate and necessary for the examiner to consider the width of the track being defined in terms of the drawing diameter of an electron beam.

In summary, Ishida’s teachings are deficient in a number of elements. The deficiencies of Ishida reference fall to the Examiner’s burden to show inherent inclusion of the claim elements. Moreover, claim 1, as now amended, clearly recites a structural feature carrying patentable weight. It is appropriate and necessary for the Examiner to now consider the width of the medium defined in terms of the diameter of the electron beam. Therefore, for all the above reasons, independent claim 1 is patentable. Claims 2-4 are patentable at least by virtue of their dependency on claim 1.

IV. Provisional Double Patenting Rejection

The Examiner provisionally rejected claims 1-4 under judicially created doctrine of obviousness-type double patenting. In particular, claims 1-4 are provisionally rejected over

claim 1 of a co-pending Application No. 10/192,849. This Application is also assigned to Fuji and the inventive entity in this co-pending application is identical to the inventive entity of the present application. Applicant files herewith a terminal disclaimer. Therefore, Applicant respectfully requests the Examiner to withdraw this rejection.

V. New Claims

In order to provide more varied protection, Applicant adds claims 5-22. Newly added claim 5 is patentable at least by virtue of its recitation of “wherein the pattern comprises a plurality of rectangular protruding portions with substantially straight end portions” and claims 6-14 at least by virtue of their dependency on claim 5.

Newly added claim 15 is patentable at least by virtue of its recitation of “scanning a second portion of the track using an electron beam, the second portion comprises of the additional part and a part of the first portion” and claims 16-20 are patentable at least by virtue of their dependency on claim 15.

Finally, newly added claims 21 and 22 are patentable at least by virtue of their dependency on claim 1. In addition, Ishida teaches away from using rectangular protrusions, as recited in newly added claims 21 and 22, because they are formed with the round end portions. Therefore, Ishida teaches the trapezoidal protrusions to avoid the rounding of the end portions of the protrusions. Clearly, Ishida does not teach having a substantially rectangular protrusions and having these rectangular protrusions with a relatively straight end portions as recited in claims 21 and 22, respectively. For at least this additional reason, newly added claims 21 and 22 are patentably distinguishable from Ishida.

Amendment under 37 C.F.R. § 1.111
U.S. Application No.: 10/615,293

Attorney Docket No.: Q76485

VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

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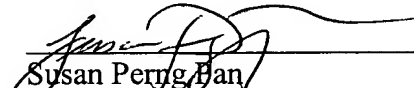
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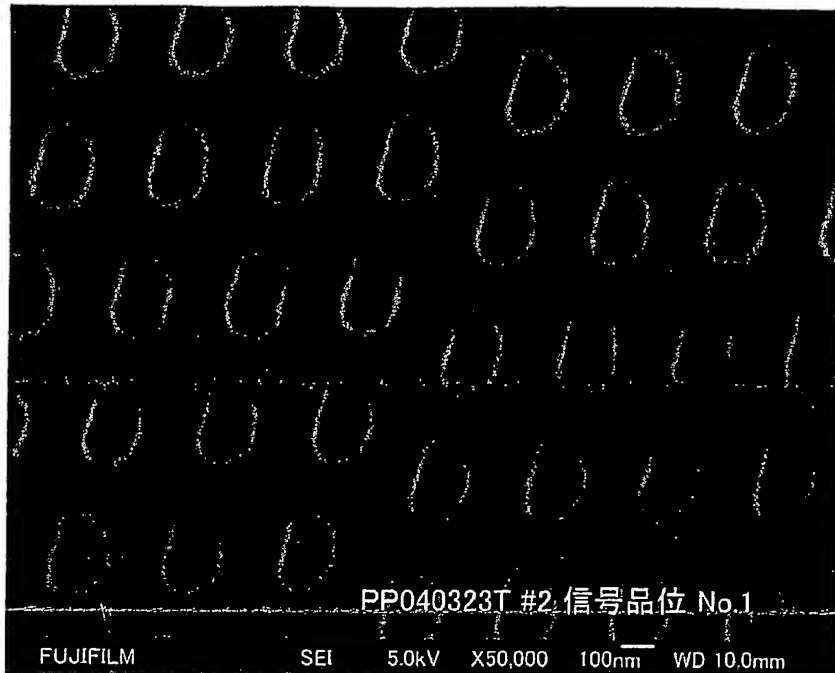
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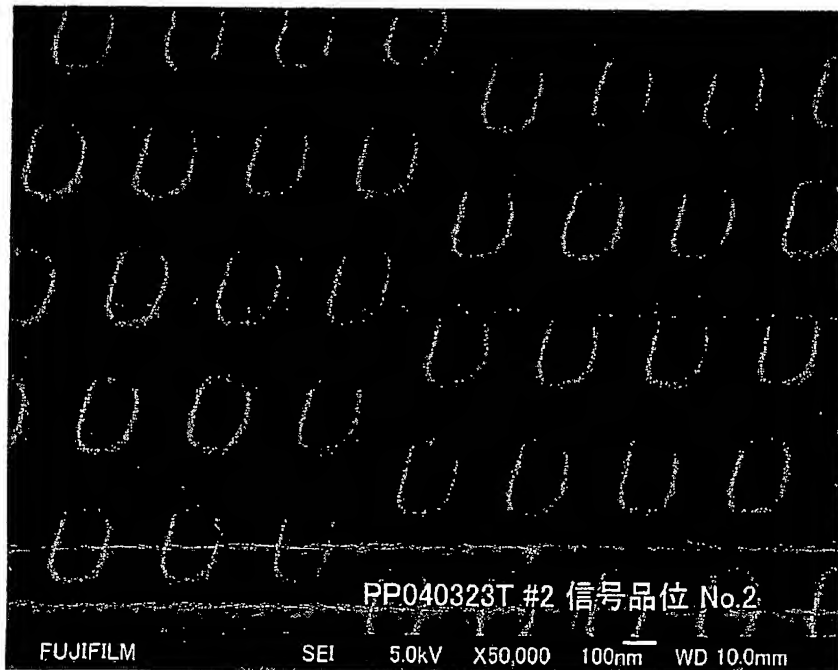
Date: January 21, 2005

EXHIBIT A

040320-1-4



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